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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,566	06/20/2001	Joachim Markert	70201	6188

7590 01/21/2004

McGLEW AND TUTTLE  
SCARBOROUGH STATION  
SCARBOROUGH, NY 10510-0827

EXAMINER

MCANULTY, TIMOTHY P

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/885,566

Applicant(s)

MARKERT, JOACHIM

Examiner

Timothy P McNulty

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003 and 10 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) 3-10, 12, 19, 22 and 31-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 11, 13-18, 20, 23, 24 and 28-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. This Office action is in response to the Supplemental Preliminary Amendment, Paper No. 17 filed 10 November 2003 and the Preliminary Amendment, Paper No. 15 filed 17 October 2003. Paper No. 17 was filed before but received after a Non-final rejection, Paper No. 16 mailed on 13 November 2003, which was responsive to Paper No. 15. Accordingly, Paper Nos. 16 and 17 are being treated as papers crossed in the mail.

***Election/Restrictions***

2. Newly submitted claims 31-33 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

- a. Claim 31, dependent on claim 28, requires that the drive input be substantially parallel to the first and second sides of said first gear part wherein the first side of said first gear part is diametrically opposite said second gear part. The input drive shown in the elected embodiment of figure 6 is substantially perpendicular to the first and second sides of said first gear part.
- b. Claim 32 requires a sensor connected to said auxiliary rotation connection not shown in the elected embodiment of figure 6.
- c. Claim 33 requires a torque device connected to said auxiliary connection not shown in the elected embodiment of figure 6.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution

Art Unit: 3682

on the merits. Accordingly, claims 31-33 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Drawings***

3. The corrected or substitute drawing was received on 17 October 2003. This drawing is approved.

***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1,2,11,13-17,20,21,23, and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Mabuchi et al.

Mabuchi et al. in figures 1-4, discloses a gear comprising a motor 1 having a drive shaft 2 and a first part 4 having a auxiliary connection device 5, namely a shaft, extending into a second part 8; wherein each of the first part and the second part are rotatable relative to one another and to the drive shaft.

Regarding claim 11, the shaft is inherently subject to a torque.

Regarding claim 21, the drive motor is inherently positioned under a finite angle with respect to the rotation axis of at least one of the parts.

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mabuchi et al. in view of Iwata.

Mabuchi discloses the basic apparatus as previously cited but does not disclose said gear being a harmonic drive gear. However, Iwata discloses in figures 4-5, a harmonic speed changer arranged in an articulation between a first arm and a second arm of a robot. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Mabuchi in view of the teachings of Iwata to arrange the gear as a harmonic gear drive to eliminate backlash within the robot joint and thus improve accuracy of robotic movement.

8. Claims 24/1,2,11,13-17,20,21,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mabuchi et al in view of James et al.

Mabuchi et al discloses the basic apparatus as previously cited but does not disclose said gear used in a robot. However, James et al. teaches a robot arm having a motor driven joint. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Mabuchi et al. in view of the teachings of James et al. that it is old and well known in the art to provide a motor driven joint for articulation of a robot.

9. Claim 24/18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mabuchi et al. in view of Iwata as applied to claim 18 above and in further view of James et al.

Mabuchi et al. in view of Iwata discloses the basic apparatus as previously cited but does not disclose said gear used in a robot. However, James et al. teaches a robot arm having a motor driven joint. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Mabuchi et al. in view of the teachings of James et al. that it is old and well known in the art to provide a motor driven joint for articulation of a robot.

#### ***Response to Arguments***

10. Applicant's arguments filed 17 October 2003 have been fully considered but they are not persuasive. As broadly claimed the auxiliary connection device of Mabuchi et al. comprises a

Art Unit: 3682

first connection part fixed to said first gear part and a second connection part opposite said first connection part. Furthermore, counsel's arguments, in lines 19-20 on page 11 of the amendment filed 17 October 2003 indicate that the second connection part of the present invention is "the area around the shaft," provide evidence in support the examiner's position.

Thus, the structure of the present invention as claimed is anticipated or rendered obvious as previously set forth. As such, a recitation claiming an un-specified benefit does not differentiate the claimed apparatus from the prior art apparatus satisfying the claimed structural limitations.


*Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy P McAnulty whose telephone number is 703.308.8684. The examiner can normally be reached on Monday-Friday (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on 703.308.3668. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1113.

tpm   
19 January 2004

  
DAVID A. BUCCI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600